

BINGHAM McCUTCHEN

## Facsimile

DATE: June 16, 2004

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PAGES: (INCLUDING THIS COVER PAGE): 6

RE: U.S. Serial Appl. No. 09/341,994  
Filing Date: 10/28/1999  
Inventor: Robert J. Fretz  
Docket No.: 22645-7013

## MESSAGE:

Dear Examiner Dabney,

Thank you for providing the interview we previously had today. As discussed, I have attached a proposed set amended claims, with the underlining and deletions indicating amended language based on the last amendment.

As you can see, the key/keyway language of claim 7 has been incorporated into claim 1, and the "tube rigidity" language has been removed from claim 1. Claims 2-6 remain unamended. Claims 15-19, 21, 27, 28, and 31 are cancelled. Independent claims 14 and 20 have been allowed and have not been amended. The remaining claims have been amended to depend from allowable claims 1 and 13. In particular, claims 7-12, 22-26, 29, 30, and 32 were amended to depend from claim 1. Claim 14 was amended to depend from claim 13.

Please feel free to call me at (714) 830-0606 should you have any questions or concerns.

Regards,

Mike Bolan

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**DRAFT****PROPOSED CLAIMS FOR 09/341,994**

1. (Currently Amended) A hearing aid system, comprising:

a hearing aid case configured to be worn behind the ear of a user, the case containing a microphone, a processor unit, a tube attachment end surface, an output connector having a nipple extending from the tube attachment end surface along a longitudinal axis, and a speaker for delivering amplified sounds to ~~an~~ the output connector of the case;

a tube having a first end for attaching to the output connector ~~of the case~~ and a second end, the tube having a preformed shape including a first bend extending from the case over the top of the ear of the user and a second bend extending from an outside of the ear into an ear canal of the user;

a key and a corresponding keyway, the key extending substantially parallel to the longitudinal axis of the nipple, the key and corresponding keyway arranged to maintain a specific orientation between the case and the tube when the tube is connected to the case; and

an eartip connected to the second end of the tube and configured to fit within the ear canal while allowing sounds outside and within the ear to pass through the ear canal around the eartip, ~~wherein said tube is sufficiently rigid such that a 1 inch segment of said tube is deflected 0.1 inches by a force of 1 g.~~

2. (Original) The hearing aid system according to Claim 1, wherein the tube has a rigidity sufficient to hold the ear canal eartip in the ear canal and the case behind the ear.

3. (Original) The hearing aid system according to Claim 1, wherein the first bend is located substantially in a first plane and the second bend is located substantially in a second plane which is approximately perpendicular to the first plane.

4. (Original) The hearing aid system according to Claim 1, wherein the tube is formed of a material having a durometer of about 65 to 85 Shore D.

5. (Original) The hearing aid system according to Claim 1, wherein the tube has an inner diameter of about 0.9 mm or less and an outer diameter of about 1.6 mm or less.

6. (Previously Presented) The hearing aid system according to Claim 1, wherein the hearing aid case including a battery has a mass of 1.5 grams or less.

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7. (Currently Amended) The hearing aid system according to Claim 1, the case further comprising a tube attachment end surface, wherein the output connector further comprises

a nipple extending from the tube attachment end surface and configured to be received in the first end of the tube, the nipple having a longitudinal axis;

a key and a corresponding keyway, said key extending substantially parallel to the longitudinal axis of the nipple, the key and corresponding keyway arranged to maintain a specific orientation between the case and the tube when the tube is connected to the case wherein the nipple includes the key.

8. (Currently Amended) The hearing aid system according to Claim 7, wherein the first end of the tube includes said the corresponding keyway.

9. (Currently Amended) ~~A hearing aid tube for connecting a case of a behind the ear hearing aid to an ear canal eartip, the tube comprising a preformed tube having an outer diameter of about 1.6 mm or less and~~ The hearing aid system according to Claim 1, wherein the tube is formed of a sufficiently rigid material that a 1 inch segment of said the tube is deflected by less than 0.1 inches by a force of 1 g.

10. (Currently Amended) ~~The hearing aid tube~~ The hearing aid system according to Claim 9, wherein the tube has a first bend configured to extend over the top of the ear of the user and a second bend configured to extend from an outside of the ear into an ear canal of the user has an outer diameter of about 1.6 mm or less.

11. (Currently Amended) ~~The hearing aid tube~~ The hearing aid system according to Claim 10, wherein the tube has been formed at high temperature to retain the first and second bends.

12. (Currently Amended) ~~A hearing aid tube for connecting a case of a behind the ear hearing aid to an ear canal eartip, The hearing aid system according to claim 1, wherein the tube comprising~~ comprises a preformed tube having an outer diameter of about 1.6 mm or less and formed of a material with a durometer of about 65 to 85 Shore D, wherein the tube has a first bend configured to extend over the top of the ear of the user and a second bend configured to extend from an outside of the ear into an ear canal of the user and the tube is sufficiently rigid

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that a 1 inch (2.54 cm) segment of the tube is deflected by less than 0.1 inches (2.54 mm) by a force of 1 gram.

13. (Previously Presented) A hearing aid case comprising:

a case body configured to be worn behind the ear of a user, the case body containing a microphone, a processor unit, and a speaker, said case body including an attachment end surface, said microphone located at said attachment end surface;

a battery compartment within the case body;

a hearing aid tube for delivering amplified sounds from the speaker to an ear canal of the user, said hearing aid tube adapted to be inserted within said ear canal;

a nipple extending from the attachment end surface and configured to be received in an end of the hearing aid tube, the nipple having a longitudinal axis; and

a key and a corresponding keyway, said key extending substantially parallel to the longitudinal axis of the nipple, the key and corresponding keyway arranged to maintain a specific orientation between the case body and the hearing aid tube when the hearing aid tube is connected to the case body.

14. (Currently Amended) ~~A hearing aid case~~ The hearing aid case according to claim 13, comprising:

~~a case body configured to be worn behind the ear of a user, the case body containing a microphone, a processor unit, and a speaker, said case body including an attachment end surface;~~

~~a battery compartment within the case;~~

~~a hearing aid tube for delivering amplified sounds from the speaker to an ear canal of the user, said hearing aid tube adapted to be inserted within said ear canal;~~

~~a nipple extending from the attachment end surface and configured to be received in the end of the hearing aid tube, the nipple having a longitudinal axis;~~

~~an annular retention ring on said the nipple; and~~

~~a recess on an internal surface of said the hearing aid tube, wherein said the recess and said the annular retention ring operate cooperatively to retain the hearing aid tube in a snap fit.~~

15-19. (Canceled)

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20. (Previously Presented) A kit of parts for a behind the ear hearing aid comprising:  
a hearing aid housing containing amplification components;  
an eartip configured to fit within an ear canal of a user while allowing sound to pass through the ear canal around the eartip;  
a hearing aid tube having a first end configured to be connected to the hearing aid housing and a second end configured to be inserted into the eartip, wherein said second end of said hearing aid tube includes at least one rib and wherein an internal surface of said eartip includes at least one groove configured to accommodate said at least one rib; and  
an inserting tool for inserting the second end of the hearing aid tube into the ear canal eartip, the inserting tool comprising:  
an elongated holder;  
an elongated recess within said elongated holder, said elongated recess configured to received a portion of the hearing aid tube adjacent to the second end;  
an end surface of said elongated holder configured to abut said at least one rib in use.
21. (Cancelled)
22. (Currently Amended) The hearing aid device system according to Claim 24 1, wherein the eartip has a flower-shape with a plurality of petals extending from a central core configured so that the petals fit around the first bend of the ear canal.
23. (Currently Amended) The hearing aid device system according to Claim 24 1, wherein the eartip includes a single blade extending from a central core configured so that the blade fits behind the ear tragus.
24. (Currently Amended) The hearing aid device system according to Claim 24 1, wherein the eartip is a conically-shaped member having first cross sectional dimension at a first end which is connected to the tube and a second cross sectional dimension which is larger than the first dimension at a second free end.
25. (Currently Amended) The hearing aid device system according to Claim 24 1, wherein the eartip is a dome-shaped member having an annular skirt extending from a central core.

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26. (Currently Amended) The hearing aid ~~device~~ system according to Claim 25, wherein the dome-shaped eartip has a plurality of vent holes.

27-28. (Cancelled)

29. (Currently Amended) The hearing aid ~~device~~ system according to Claim ~~21~~ 1, wherein the eartip includes a wax guard.

30. (Currently Amended) The hearing aid system according to claim 1, wherein ~~said~~ the eartip comprises an interior socket with a plurality of internal circular grooves and the second end of ~~said~~ the tube comprises a cylindrical member with a plurality of annular ribs on the surface of the cylindrical member, the annular ribs being adapted to be accommodated to the plurality of internal circular grooves.

31. (Cancelled)

32. (Currently Amended) The hearing aid ~~device~~ system according to Claim ~~21~~ 1, wherein ~~said~~ the eartip comprises an interior socket with a plurality of internal circular grooves and the second end of ~~said~~ the tube comprises a cylindrical member with a plurality of annular ribs on the surface of the cylindrical member, the annular ribs being adapted to be accommodated to the plurality of internal circular grooves.

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RE: U.S. Serial Appl. No. 09/341,994  
Filing Date: 10/28/1999  
Inventor: Robert J. Fritz  
Docket No.: 22645-7013

**MESSAGE:**

Dear Esymtrey Dotsey,

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As you can see, the key/keyway language of claim 7 has been incorporated into claim 1, and the "tube rigidity" language has been removed from claim 1. Claims 2-6 remain unamended. Claims 15-19, 21, 27, 28, and 31 are cancelled. Independent claims 14 and 20 have been allowed and have not been amended. The remaining claims have been amended to depend from allowable claims 1 and 13. In particular, claims 7-12, 22-26, 29, 30, and 32 were amended to depend from claim 1. Claim 14 was amended to depend from claim 13.

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Mike Bolan

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